

Health and Social Inclusion: The Impact of Psychological Well-Being and Suicide Attempts Among Older Men Who Have Sex With Men

American Journal of Men's Health
September-October 1–9
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DOI: 10.1177/15579883221120985
journals.sagepub.com/home/jmh


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Abstract

Older adults' mental health and suicidal tendencies have garnered much attention because of their vulnerability. Few studies have examined the impact of psychological well-being and suicide attempts among older men who have sex with men (OMSM). This study examines the levels of depression and suicidal tendencies among OMSM, factors impacting their mental health, and their likelihood of committing suicide. Descriptive statistics are used to analyze the correlation between depression and suicidal tendencies among OMSM in the United States. We constructed a regression model using relevant data, and scales were selected based on a literature review. The validity and relevance of the control variables were considered. Depression and suicidal tendencies were dependent variables. Data were obtained from the U.S. General Social Survey and analyzed with an ordinary least squares model. There were significant differences between MSM and general groups in depression and suicidal tendency scores ($t = 67.084, 58.193, p < .01$). Compared with general groups, MSM scored significantly higher on depression and suicidal tendencies. The regression analysis revealed that sex with men was associated with depression and suicidal tendencies ($p < .01$) among older men. This indicates that OMSM generally have higher levels of depression and suicidal tendencies than the general population. Finally, in the intermediary test, the level of depression had a significant mediating effect on the relationship between homosexuality and suicidal tendencies ($p < .01$). This suggests that depression intervention can help reduce suicidal tendencies among OMSM.

Keywords

older men who have sex with men, suicidal tendency, social inclusion and exclusion, healthy aging, psychological well-being, depression

Received July 1, 2022; revised August 1, 2022; accepted August 4, 2022

Introduction

Suicide is a primary risk factor for mortality among men who have sex with men (MSM), and depression can increase a person's suicidal thoughts (Jadva et al., 2021). Research has reported considerable variation in the lifetime prevalence of suicidal thoughts among MSM, highlighting the critical need for a valid estimate of the pooled lifetime prevalence (Goodyear et al., 2021; Medina-Martínez et al., 2021). Only two meta-analyses assessing the pooled lifetime prevalence of suicidal thoughts in MSM have been published, and none have been

published since 2008 (Patten et al., 2022; Wang et al., 2022). The literature reporting lifetime suicidal ideation among MSM has increased rapidly, indicating the need to assess the pooled lifetime prevalence of suicidal ideation among MSM (Kachen et al., 2022).

Suicide has developed into a major medical concern among MSM (Sakai & Tanifuji, 2021). In 2011, more MSM were believed to have died from suicidal behavior than from HIV-related diseases in Canada (Wang et al., 2021), and China has recorded a dramatic rise in suicide-related actions (Del Río-González et al., 2021; Ogunbajo et al., 2021; VanBronkhorst et al., 2021).



Suicidal ideation, which can be described as pondering, contemplating, or making preparations for suicide (Meyer et al., 2021), has been linked to an increased risk of suicide (Bochicchio et al., 2021; Lee et al., 2021). The minimal success in preventing suicide is a lack of understanding, particularly concerning how and when suicidal thoughts possibly evolve into suicidal acts (Morgan et al., 2020). People who have suicidal ideation have a considerably increased risk of suicide compared with those who do not (Boyer et al., 2021). It has been identified that MSM are at a greater risk of suicidal ideation than heterosexual men (Ramírez et al., 2020; Wu & Lee, 2021), which may be related to the prejudice and stigma connected with their sexuality (Blosnich et al., 2020b; Fulginiti et al., 2021).

An overwhelming proportion of MSM have good psychological health. Nevertheless, MSM are at a higher risk of psychological wellness issues than other men (Chan et al., 2022a; Chang et al., 2020). This topic is very under-researched. A feeling of despair is a prevalent thread that runs across most suicide deaths. MSM belong to a marginalized group in society and are often discriminated against and suppressed by mainstream groups (Blosnich et al., 2020a). Therefore, they are prone to depression and suicidal thoughts. Using secondary data, this study examined whether having sex with men impacts the level of depression among older men who have sex with men (OMSM). Then, we examined the suicidal tendencies of MSM. Finally, we tested the mediating role of depression in the suicidal tendencies of OMSM.

Literature Review

The literature review was divided into two main parts: the first was the research on psychological well-being among OMSM, and the second was the research on suicide among MSM.

Psychological Impact on OMSM

Researchers have delved into the psychosocial experiences of lesbian, gay, bisexual, and transgender (LGBT) adults in the past few decades, while we still need to learn more about transgender experiences (Ancheta et al., 2021; Marshall & Cahill, 2021). It has generally been

observed that LGBT older adults have poorer mental health and more significant mental distress than heterosexual older adults (Zay Hta et al., 2021). Depressive symptoms are estimated to occur in 29% of patients (Oudin Doglioni et al., 2021). Thus, the study reported that the prevalence of depression among MSM was even higher.

Research suggests that social support and interpersonal interactions can decrease depression levels and increase overall levels of quality of life (Yang et al., 2021); depression, especially untreated, can negatively affect the quality of life (Yan et al., 2022; Yang et al., 2021). Community members, neighbors, and relatives may provide social support to LGBT older adults (Haggart et al., 2021), increasing the chances of those individuals having a better mental health (lower levels of depression and anxiety) and better quality of life (Martiana et al., 2021).

Fear of stigmatization can make it difficult for LGBT older adults with depression to seek health care services. More awareness of this possibility when screening for depressive symptoms in primary care settings and in communities that provide aging-related services can potentially lead to the development and provision of appropriate interventions for promoting a positive mental health state and healthy participation in health care among this vulnerable and increasing population (Lyons et al., 2021; Pereira, 2022).

Suicide Among MSM

Tan et al. (2021) reported a common pattern among MSM who commit suicide. The author suggested that these men generally lack the comprehensive ability to solve complex problems and coping skills against pressure. They are limited in their ability to understand and solve repeated problems related to family discord and their refusal or inability to make choices may lead to suicide. This is especially the case among MSM teenagers. Being aware of their sexual orientation and accepting this fact generally will not become a source of stress immediately, but it may narrow the scope of sources of help from significant others (such as friends, family, etc.). MSM who disclose their sexual orientation usually experience family discord, rejection, and failure.

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Homosexuality is considered an important factor in adolescent suicide (Tan et al., 2021). In a survey of 350 MSM teenagers aged 14 to 21, 54% of the participants had attempted suicide before disclosing their sexual orientation, 27% had attempted suicide in the year when they disclosed their sexual orientation, and 19% have attempted suicide after they disclosed it. The study suggests that, when examining the factors that lead to suicide among men, it is important to consider sexual orientation.

Method

This study followed the route of descriptive statistical analysis, correlation analysis, and regression analysis. The primary research methods were literature review and statistical analysis method. This study determined the selected data set, defined the scales and demographic variables in the data set, and confirmed the statistical analysis methods using the relevant literature. Secondary data from the 2021 U.S. General Social Survey (GSS) were used. The data are publicly available from Opportunity Insights, an organization based in the United States. Opportunity Insights relies on big data to transform scientific research into policy change. It is a non-profit organization and is based at Harvard University.

This study aims to examine the mental health and depression of OMSM. Therefore, we selected older men aged over 65 in the GSS data, of which 409 cases are MSM, and more than 1,000 cases are heterosexual. The control group consists of 400 cases randomly selected from the 1,000 cases, and the experimental group comprises 409 MSM. Among the experimental and control groups, 409 cases were MSM, while 400 cases were heterosexual.

Based on the relevant literature, we selected three statistical analysis methods to analyze the levels of depression and suicidal tendency among OMSM and to test the mediating role of depression in the relationship between suicide and having sex with men in that population: descriptive statistical analysis, correlation analysis, and regression analysis. Specifically, the random number generator of SPSS software (IBM Corporation, Armonk, NY, USA) was used to generate half of the total number. The experimental group consisted of individuals with the same number as the generated number, and the control group consisted of the remaining individuals. A questionnaire from the U.S. GSS data set was used to measure income, the number of children, sports habits, and social support.

The two core variables in this study were depression and suicidal tendency. The two variables were measured with related scales. In psychology, depression and anxiety are usually measured by scale. The questionnaire

survey of this study mainly refers to relevant foreign studies. For the measurement of senile depression, the author mainly refers to the Geriatric Depression Scale (GDS), originally developed by Brink et al. (1982). The GDS has become a depression screening scale specially designed for older adults, is widely accepted and applied by various countries, and has good reliability and validity (Sun et al., 2020). Experts from various countries have analyzed the GDS in terms of various inducing factors of senile depression and obtained a revised version of the GDS suitable for their own country. These versions have been widely used by researchers from various countries (Xinou et al., 2018). The Chinese version prepared by Chinese psychiatrists was used in this study. The GDS contains 30 items, which describe the main manifestations of senile depression, including decreased life satisfaction, decreased interest in activities, emptiness, boredom, loss of hope for the future, worry, decreased energy, and so on. The main statistical index of the GDS is the total score, which ranges from 0 to 30. The total score reflects the level of depressive symptoms. A total score of ≥ 11 points indicates depressive symptoms, including 11 to 20 points for mild depression and 21 to 30 points for moderate and severe depression.

Beck's Suicidal Ideation Questionnaire and the suicide attitude questionnaire are often used to measure suicidal ideation. Gull and Gill proposed (1982) and revised (1988) the suicide probability scale to assess the frequency of personal subjective feelings or behaviors.

Statement of Consent and Data Availability

The data were obtained from Opportunity Insights. Opportunity Insights, a U.S.-based organization, relies on big data to transform scientific research into policy change. It is a nonprofit organization based at Harvard University. The data are available on its website at the following address: https://opportunityinsights.org/data/?geographic_level=0&topic=0&paper_id=0#resource-listing, the data that support the findings of this study.

Data Analysis

Descriptive Statistics

A descriptive statistical analysis was carried out (Table 1). In the dependent variable score dimension, the mean depression score of OMSM was 4.312 (Likert-type 5-point scale), and the standard deviation was 1.341. The standard deviation was significantly less than the mean value, and therefore, it was more concentrated in the distribution of the mean depression score. The mean suicidal tendency score was 3.378, and the standard deviation was 1.109. The standard deviation was less than the mean value, and its

Table 1. Descriptive Statistics of Fixed Distance Variables.

Type	Variable	Number of observations	Mean value	Standard deviation
Independent variable	OMSM group	811	0.494	0.017
Dependent variable	Depression score	809	4.312	1.341
	Suicidal tendency score	807	3.378	1.109
OMSM group	Depression score	409	4.576	1.279
General group	Depression score	400	1.798	0.515
OMSM group	Suicidal tendency score	409	3.475	1.094
General group	Suicidal tendency score	400	1.104	0.497

Note. OMSM = older men who have sex with men.

Table 2. Descriptive Statistics of Fixed Class Variables.

Variable	Category	Frequency	Percentage
Exercise habits	Yes	405	50.1
	No	404	49.9
Education level	Below junior high school	174	21.5
	High school vocational school	189	23.4
	College	140	17.3
	Undergraduate college	137	16.9
	Graduate student	169	20.9
Income level (USD)	Below 1,250	188	23.2
	1,251–2,350	214	26.5
	2,351–4,700	188	23.2
	Above 4,700	219	27.1
Sexual identity (Gay)	Yes	409	50.6
	No	400	49.4
Have children	1	364	45.0
	2	376	46.5
	3	62	7.7
	4	2	0.2
	5	5	0.6

score distribution in the suicidal tendency dimension was also concentrated. In the OMSM group, the mean value was 0.494, which indicates that in a total of 811 older adult males.

Table 2 presents the results of the descriptive statistical analysis of the categorical variables. As indicated in the table, there were 405 participants who exercised and 404 participants who did not exercise. In terms of education level, 174 participants had an education level of junior high school and below, 189 had an education level of senior high school, 140 had an education level of college, 137 had an education level of undergraduate, and 169 had an education level of graduate and above. In terms of income, there were 188 participants with an income of <1,250 USD, 214 participants with an income of 1,251 to 2,350 USD, 188 participants with an income of 2,351 to 4,700 USD, and 219 with an income of more than 4,700 USD; 409 participants were MSM and 400

were not. There were 364 cases with only 1 child, 376 cases with 2 children, 62 cases with 3 children, 2 cases with 4 children, and 5 cases with 5 children or more.

Mean Test of Differences in Depression and Suicidal Tendency Between the OMSM Group and the General Population

Based on the descriptive statistical analysis, the authors compared the mean values of the depression and suicidal tendency scores of the OMSM group and the general group to preliminarily verify the impact of homosexuality on depression and suicidal tendency.

As presented in Table 3, the average depression score in the OMSM group was 4.576, and the average score in the general group was 1.798. The *t* value was 67.084, and the significance level was approximately 0. In the suicidal tendency score dimension, the average score in the

Table 3. The t-Test Results of Independent Samples.

Items	OMSM group	General group	t value	p value
Degree of depression	4.576	1.798	67.084***	.000
Suicidal tendency	3.475	1.104	58.193***	.000

Note. OMSM = older men who have sex with men.

*** $p < .01$. ** $p < .05$. * $p < .1$ (two tailed test).

OMSM group was 3.475, and the average score in the general group was 1.104. The t value was 58.193, and the p value was approximately 0. Therefore, an independent sample t -test can further clarify whether it is the (homo) sexuality of older adults that significantly impacts the group's levels of depression and suicidal tendency.

Regression Analysis

A regression analysis was conducted on the relationship between homosexuality and depression among older adult men. The results are presented in Table 4.

Table 4 presented the impact of male homosexuality on the levels of depression of older adults, with income, children, education, exercise habits, and social support as the control variables; male homosexuality as the core independent variable; and depression score as the dependent variable. The regression contained two models. Model 1 included the control variable. Model 2 was based on Model 1, and the core variable was male homosexuality. The explanatory power of Model 1 was 12.7% and that of Model 2 was 31.5%, while Model 1 and Model 2 were significantly different from 0. Specifically, based on the regression coefficients, the income level negatively impacted depression, but it was not significant. Having no children had a significant positive effect on the levels of depression. Social capital had a significant negative effect on the levels of depression. In Model 2, male homosexuality showed a strong positive effect on the levels of depression, with a coefficient of 0.401. The depression score of the MSM group was 0.410 points higher than that of the non-MSM men group, with a significant difference.

Table 5 presented the impact of male homosexuality on suicidal tendencies among older adults, with income, children, education, exercise habits, and social support as the control variables. Male homosexuality was the core independent variable, and the depression score was the dependent variable. The regression consisted of two models. Model 1 contained the control variable. Model 2 was based on Model 1, and the core variable was male homosexuality. From the above results, it can be seen that the

Table 4. Regression Results of the Level of Depression.

Models and variables	Level of depression	
	Model I	Model II
TOP income	-.069	-.074
No children	.098*	.092*
Undergraduate college	.054	.053
No exercise	-.031	-.021
Social capital	-.093*	-.096*
For MSM		0.401***
Adj R^2	12.7%	31.5%
Adj R^2 variation	12.7%	18.8%
F value	11.101***	24.189***

*** $p < .01$. ** $p < .05$. * $p < .1$ (two tailed test).

Table 5. Regression Results of Suicidal Tendencies.

Models and variables	Suicidal tendency	
	Model I	Model II
TOP income	-0.171*	-0.174*
No children	0.016	0.032
Undergraduate college	0.032	0.031
No exercise	-0.231*	-0.221*
Social capital	-0.393**	-0.396**
For MSM		1.307***
Adj R^2	16.2%	33.4%
Adj R^2 variation	16.2%	17.2%
F value	13.302***	27.224***

*** $p < .01$. ** $p < .05$. * $p < .1$ (two-tailed test).

explanatory power of Model 1 was 16.2%, and that of Model 2 was 33.4%, while Model 1 and Model 2 were significantly different from 0. Specifically, based on the regression coefficient, the income level had a significant negative impact on suicidal tendencies, indicating that the higher the income, the lower the suicidal tendency of the MSM group. Having no children had a significant positive impact on suicidal tendency. Social capital had a significant negative impact on suicidal tendencies. In Model 2, the male homosexuality variable showed a strong positive effect on suicidal tendencies, with a coefficient of 1.307. The average score of suicidal tendencies of the MSM group was 1.307 points higher than that of the non-MSM men group.

The main purpose of the regression model summarized in Table 6 was to test whether the level of depression plays a mediating role in the influence of homosexuality on suicidal tendencies among older men. Therefore, three models were used in the analysis. Model 1 only included control variables, and Model 2 included

Table 6. Mediating Effects of Depression.

Models and variables	Suicidal tendency		
	Model I	Model II	Model III
TOP income	-0.171*	-.0174*	-.0172*
No children	0.016	0.022	0.021
undergraduate college	0.032	0.031	0.033
No exercise	-0.231*	-0.221*	-0.224*
Social capital	-0.393**	-0.396**	-0.398**
For MSM		1.307***	1.198***
Degree of depression			0.718***
Adj R^2	16.2%	33.4%	41.2%
Adj R^2 variation	16.2%	17.2%	7.8%
F value	13.302***	27.224***	31.145***

*** $p < .01$. ** $p < .05$. * $p < .1$ (two-tailed test).

male homosexuality as the core independent variable based on Model 1, and Model 3 included the level of depression as the intermediary variable. The Adj R^2 of Model 1, Model 2, and Model 3 were 16.2%, 33.4%, and 41.2%, respectively. The significance of the model increased accordingly, and the F values were 13.302, 27.224, and 31.145, respectively. Because this part mainly tested the mediating effect of depression, we only needed to focus on the coefficients of Model 2 and Model 3. In Model 2, homosexuality had a direct and significant positive impact on suicidal tendencies. In Model 3, the level of depression and homosexuality showed a positive impact on suicidal tendencies at the same time, and the significance of homosexuality decreased slightly, indicating that the level of depression played a partial mediating role; that is, part of the impact of homosexuality on suicidal tendencies was achieved by improving the level of depression.

Results

Results of the descriptive statistical analysis, regression analysis, and intermediary analysis revealed significant differences between MSM and the general population in terms of the levels of depression and suicidal tendencies; the depression and suicidal tendency scores of the OMSM group were significantly higher than those of the general group. The regression analysis found that the OMSM group had significantly higher levels of depression and suicidal tendencies than the general group. Having sex with men had a significant positive impact on individual depression and suicidal behavior among older men. Results from the intermediary test revealed that the severity of depression played a significant role in the impact that being an OMSM had on suicidal tendencies, indicating that suicidal tendencies of

OMSM can be addressed through interventions aimed at reducing depression.

Discussion

MSM who are members of ethnic minority groups are more likely to suffer from depression. Recent years have seen an increase in the number of studies on HIV-positive MSM and MSM who belong to ethnic minority groups (Chan et al., 2022b; Peters et al., 2020). To help these vulnerable subgroups, future studies should focus on identifying and addressing the unique depression risk factors they face. In addition, when compared with bisexual men, MSM showed increased levels of depression (Proulx et al., 2019). Higher rates of depressive symptoms can be attributed to the co-occurrence of social functioning problems and depression. Several studies have demonstrated that individuals belonging to a minority or socially disadvantaged group are likely to have low levels of social support (Meyer et al., 2019; Ogunbajo et al., 2021; Pereira, 2022), and these individuals are also likely to experience depression and decreased quality of life (Marshall, 2016).

The results are consistent with accumulating data indicating that exposure to social discrimination can increase depression and reduce the quality of life, and policymakers need to be particularly aware of the needs of OMSM when dealing with issues regarding social inclusion. To begin addressing this issue, this study documented the depressive symptoms among OMSM, but more research is needed, namely, the inclusion of LGB older persons to address health disparities among these groups. In addition, more qualitative research is needed to examine the concerns and needs of LGB older persons (Lo et al., 2022), providing directions for more inclusive policy measures and local and global actions that can protect

LGB older adults from the risk of depression and enhance their overall quality of life.

Limitations

Through the descriptive statistical analysis, independent sample *t*-test, and regression analysis, this study examined the levels of depression and suicidal tendencies among OMSM, the influence of homosexuality on levels of depression and suicidal tendencies, and the role of the level of depression in the influence of homosexuality on suicidal tendencies. This study had several limitations. First, the data used are from the United States, so there may be some regional limitations. Second, the selection of statistical methods is fairly basic and is mainly based on regression analysis, especially in the test of intermediary effect. We did not obtain the path coefficients of intermediary variables.

Conclusion

This study used the literature review method, secondary data, and statistical analysis to examine the levels of depression and suicidal tendencies among OMSM in the United States. It tested whether homosexuality influenced the levels of depression and suicidal tendencies among older adult men, focusing on the mediating role of the level of depression in the relationship between homosexuality and suicidal tendencies. The results showed that OMSM had higher depression and suicidal tendency scores. The level of depression had a mediating role in the relationship between homosexuality and suicidal tendencies among OMSM.

Acknowledgments

AC would like to express his gratitude to Dr. Ben Ku from the Department of Applied Social Sciences, Hong Kong Polytechnic University.


Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The preparation of this manuscript was partially supported by funding from the Department of Applied Social Sciences, The Hong Kong Polytechnic University.

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References

- Ancheta, A. J., Bruzzese, J. M., & Hughes, T. L. (2021). The impact of positive school climate on suicidality and mental health among LGBTQ adolescents: A systematic review. *The Journal of School Nursing, 37*(2), 75–86. <https://doi.org/10.1177/1059840520970847>
- Blosnich, J. R., Clark, K. A., Mays, V. M., & Cochran, S. D. (2020a). Sexual and gender minority status and firearms in the household: Findings from the 2017 behavioral risk factor surveillance system surveys, California and Texas. *Public Health Reports, 135*(6), 778–784. <https://doi.org/10.1177/0033354920954789>
- Blosnich, J. R., Henderson, E. R., Coulter, R. W. S., Goldbach, J. T., & Meyer, I. H. (2020b). Sexual orientation change efforts, adverse childhood experiences, and suicide ideation and attempt among sexual minority adults, United States, 2016–2018. *American Journal of Public Health, 110*(7), 1101024–1101030. <https://doi.org/10.2105/AJPH.2020.305637>
- Bohicchio, L., Reeder, K., Aronson, L., McTavish, C., & Stefancic, A. (2021). Understanding factors associated with suicidality among transgender and gender-diverse identified youth. *LGBT Health, 8*(4), 245–253.
- Boyer, T. L., Youk, A. O., Haas, A. P., Brown, G. R., Shipherd, J. C., Kauth, M. R., Jasuja, G. K., & Blosnich, J. R. (2021). Suicide, homicide, and all-cause mortality among transgender and cisgender patients in the Veterans Health Administration. *LGBT Health, 8*(3), 173–180.
- Brink, T. L., Yesavage, J. A., Lum, O., Heersema, P. H., Adey, M., & Rose, T. L. (1982). Screening tests for geriatric depression. *Clinical Gerontologist, 1*(1), 37–43.
- Chan, A. S. W., Wu, D., Lo, I. P. Y., Ho, J. M. C., & Yan, E. (2022a). Diversity and inclusion: Impacts on psychological wellbeing among Lesbian, Gay, Bisexual, Transgender, and Queer communities. *Frontiers in Psychology, 13*, 726343. <https://doi.org/10.3389/fpsyg.2022.726343>
- Chan, A. S. W., Tang, P. M. K., & Yan, E. (2022b). Chemsex and its risk factors associated with human immunodeficiency virus among men who have sex with men in Hong Kong. *World Journal of Virology, 11*(4), 208–211. <https://doi.org/10.5501/wjv.v11.i4.208>
- Chang, C. J., Kellerman, J., Feinstein, B. A., Selby, E. A., & Goldbach, J. T. (2020). Greater minority stress is associated with lower intentions to disclose suicidal thoughts among LGBTQ + youth. *Archives of Suicide Research*. Advance online publication. <https://doi.org/10.1080/13811118.2020.1818656>
- Del Río-González, A. M., Zea, M. C., Flórez-Donado, J., Torres-Salazar, P., Abello-Luque, D., García-Montano, E. A., García-Roncillo, P. A., & Meyer, I. H. (2021). Sexual orientation and gender identity change efforts and suicide morbidity among sexual and gender minority adults in Colombia. *LGBT Health, 8*(7), 463–472.
- Fulginiti, A., Rhoades, H., Mamey, M. R., Klemmer, C., Srivastava, A., Weskamp, G., & Goldbach, J. T. (2021). Sexual minority stress, mental health symptoms, and suicidality among LGBTQ youth accessing crisis services. *Journal of Youth and Adolescence, 50*(5), 893–905.

- Goodyear, T., Slemmon, A., Richardson, C., Gadermann, A., Salway, T., Dhari, S., Knight, R., & Jenkins, E. (2021). Increases in alcohol and cannabis use associated with deteriorating mental health among LGBTQ2+ adults in the context of COVID-19: A repeated cross-sectional study in Canada, 2020–2021. *International Journal of Environmental Research and Public Health*, *18*(22), Article 12155. <https://doi.org/10.3390/ijerph182212155>
- Haggart, R., Polter, E., Ross, M., Kohli, N., Konety, B. R., Mitteldorf, D., West, W., & Rosser, B. S. (2021). Comorbidity prevalence and impact on quality of life in gay and bisexual men following prostate cancer treatment. *Sexual Medicine*, *9*(6), Article 100439.
- Jadva, V., Guasp, A., Bradlow, J. H., Bower-Brown, S., & Foley, S. (2021). Predictors of self-harm and suicide in LGBT youth: The role of gender, socio-economic status, bullying and school experience. *Journal of Public Health*. Advance online publication. <https://doi.org/10.1093/pubmed/fdab383>
- Kachen, A., Pharr, J. R., Chien, L. C., & Flatt, J. D. (2022). Creating a minority stress index to examine mental health impacts of discrimination among transgender and gender nonbinary adults. *LGBT Health*, *9*(1), 63–71.
- Lee, H., Streed, C. G., Yi, H., Choo, S., & Kim, S. S. (2021). Sexual orientation change efforts, depressive symptoms, and suicidality among lesbian, gay, and bisexual adults: A cross-sectional study in South Korea. *LGBT Health*, *8*(6), 427–432.
- Lo, I. P. Y., Liu, E. H., Lai, D. W. L., & Yan, E. (2022). Reflexive planning for later life: Minority stress and aging challenges among midlife Chinese lesbians and gay men. *Journal of Homosexuality*. Advance online publication. <https://doi.org/10.1080/00918369.2022.2095242>
- Lyons, A., Alba, B., Waling, A., Minichiello, V., Hughes, M., Barrett, C., Fredriksen-Goldsen, K., Savage, T., & Edmonds, S. (2021). Assessing the combined effect of ageism and sexuality-related stigma on the mental health and well-being of older lesbian and gay adults. *Aging & Mental Health*, *26*, 1460–1469.
- Marshall, A. (2016). Focus: Sex and gender health: Suicide prevention interventions for sexual & gender minority youth: An unmet need. *The Yale Journal of Biology and Medicine*, *89*(2), 205.
- Marshall, A., & Cahill, S. (2021). Barriers and opportunities for the mental health of LGBT older adults and older people living with HIV: A systematic literature review. *Aging & Mental Health*. Advance online publication. <https://doi.org/10.1080/13607863.2021.2003300>
- Martiana, I., Waluyo, A., Yona, S., & Edianto, E. (2021). A secondary analysis of peer support and family acceptance among homosexual living with HIV and antiretroviral therapy: Quality of life perspectives. *Jurnal Keperawatan Indonesia*, *24*(1), 1–8.
- Medina-Martínez, J., Saus-Ortega, C., Sánchez-Lorente, M. M., Sosa-Palanca, E. M., García-Martínez, P., & Mármol-López, M. I. (2021). Health inequities in lgbt people and nursing interventions to reduce them: A systematic review. *International Journal of Environmental Research and Public Health*, *18*(22), Article 11801. <https://doi.org/10.3390/ijerph182211801>
- Meyer, I. H., Blosnich, J. R., Choi, S. K., Harper, G. W., & Russell, S. T. (2021). Suicidal behavior and coming out milestones in three cohorts of sexual minority adults. *LGBT Health*, *8*(5), 340–348.
- Meyer, I. H., Luo, F., Wilson, B. D., & Stone, D. M. (2019). Sexual orientation enumeration in state antibullying statutes in the United States: Associations with bullying, suicidal ideation, and suicide attempts among youth. *LGBT Health*, *6*(1), 9–14.
- Morgan, E., Feinstein, B. A., & Dyar, C. (2020). Disparities in prescription opioid misuse affecting sexual minority adults are attenuated by depression and suicidal ideation. *LGBT Health*, *7*(8), 431–438.
- Ogunbajo, A., Oke, T., Okanlawon, K., Abubakari, G. M. R., & Oginni, O. (2021). Religiosity and conversion therapy is associated with psychosocial health problems among sexual minority men (SMM) in Nigeria. *Journal of Religion and Health*, *61*, 3098–3128.
- Oudin Doglioni, D., Chabasseur, V., Barbot, F., Galactéros, F., & Gay, M. C. (2021). Depression in adults with sickle cell disease: A systematic review of the methodological issues in assessing prevalence of depression. *BMC Psychology*, *9*(1), Article 54.
- Patten, M., Carmichael, H., Moore, A., & Velopoulos, C. (2022). Circumstances of suicide among lesbian, gay, bisexual and transgender individuals. *The Journal of Surgical Research*, *270*, 522–529. <https://doi.org/10.1016/j.jss.2021.08.029>
- Pereira, H. (2022). The impacts of sexual stigma on the mental health of older sexual minority men. *Aging & Mental Health*, *26*(6), 1281–1286.
- Peters, J. R., Mereish, E. H., Krek, M. A., Chuong, A., Ranney, M. L., Solomon, J., Spirito, A., & Yen, S. (2020). Sexual orientation differences in non-suicidal self-injury, suicidality, and psychosocial factors among an inpatient psychiatric sample of adolescents. *Psychiatry Research*, *284*, Article 112664.
- Proulx, C. N., Coulter, R. W., Egan, J. E., Matthews, D. D., & Mair, C. (2019). Associations of lesbian, gay, bisexual, transgender, and questioning–inclusive sex education with mental health outcomes and school-based victimization in US high school students. *Journal of Adolescent Health*, *64*(5), 608–614.
- Ramírez, E. G. L., Delgado, Y. K., Volpato, R. J., de Claudio, J. C. M., Pinho, P. H., & de Vargas, D. (2020). Suicidal ideation in gender and sexual minority students in the largest Brazilian university. *Archives of Psychiatric Nursing*, *34*(6), 467–471.
- Sakai, K., & Tanifuji, T. (2021). Suicides among lesbian, gay, bisexual, and transgender people: Medical examiner reports in the special wards of Tokyo, Japan, 2009–2018. *LGBT Health*, *8*(8), 519–525.
- Sun, L., Mao, J. J., Yan, Y., Xu, Y., & Yang, Y. (2021). Patient reported traditional Chinese Medicine Spleen Deficiency Syndrome (TCM-SDS) Scale for colorectal cancer: Development and validation in China. *Integrative Cancer Therapies*, *20*, Article 1020105. <https://doi.org/10.1177/15347354211020105>

- Tan, R. K. J., Low, T. Q. Y., Le, D., Tan, A., Tyler, A., Tan, C., Kwok, C., Banerjee, S., Cook, A. R., & Wong, M. L. (2021). Experienced homophobia and suicide among young gay, bisexual, transgender, and queer men in Singapore: exploring the mediating role of depression severity, self-esteem, and outness in the Pink Carpet Y Cohort Study. *LGBT Health, 8*(5), 349–358.
- VanBronkhorst, S. B., Edwards, E. M., Roberts, D. E., Kist, K., Evans, D. L., Mohatt, J., & Blankenship, K. (2021). Suicidality among psychiatrically hospitalized lesbian, gay, bisexual, transgender, queer, and/or questioning youth: Risk and protective factors. *LGBT Health, 8*(6), 395–403.
- Wang, Y., Chang, S., & Miao, N. (2022). Suicide attempts among Taiwanese lesbian, gay, bisexual, and transgender adults during the 2018 Taiwan referendum on same-sex issues. *Journal of Nursing Scholarship, 54*(3), 388–395. <https://doi.org/10.1111/jnu.12744>
- Wang, Y., Ma, Z., Wilson, A., Hu, Z., Ying, X., Han, M., Cui, Z., & Chen, R. (2021). Psychopathological symptom network structure in transgender and gender queer youth reporting parental psychological abuse: A network analysis. *BMC Medicine, 19*(1), Article 215.
- Wu, C. Y., & Lee, M. B. (2021). Suicidality, self-efficacy and mental health help-seeking in lesbian, gay, bisexual and transgender adults in Taiwan: A cross-sectional study. *Journal of Clinical Nursing, 30*(15-16), 2270–2278.
- Xinou, E., Chrysogonidis, I., Kalogera-Fountzila, A., Panagiotopoulou-Mpoukla, D., & Printza, A. (2018). Longitudinal evaluation of swallowing with videofluoroscopy in patients with locally advanced head and neck cancer after chemoradiation. *Dysphagia, 33*, 691–706. <https://doi.org/10.1007/s00455-018-9889-4>
- Yan, F., Tang, S., Goldsamt, L., Wang, H., Chen, J., & Li, X. (2022). Interrelationships between intimate partner violence, coping style, depression, and quality of life among the regular female sexual partners of men who have sex with men. *Journal of Interpersonal Violence, 37*(1–2), NP651–NP670.
- Yang, L., Pan, D., Li, Z., & Liu, X. (2021). Validation of a Chinese Version of the Acquired Capability for Suicide Scale. *Death Studies, 45*, 630–637. <https://doi.org/10.1080/07481187.2019.1671545>
- Zhang, J., & Peng, Y. (2020). Effects of family involvement in nursing mode on postoperative depression and anxiety in patients with laryngeal cancer. *American Journal of Nursing Science, 9*, 70–73. <https://doi.org/10.11648/j.ajns.20200902.16>
- Zay Hta, M. K., Tam, C. L., Au, S. Y., Yeoh, G., Tan, M. M., Lee, Z. Y., & Yong, V. V. (2021). Barriers and facilitators to professional mental health help-seeking behavior: perspective of Malaysian LGBT individuals. *Journal of LGBTQ Issues in Counseling, 15*(1), 38–58.